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DISCIPLINARY VALUES IN INDIVIDUALIZED EDUCATION[1]

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THERE are no misfit children. There are misfit courses of study, misfit text-books and misfit teachers. But in the very nature of the case, there can be no misfit children. The child is what education is for. One might as well say that a man does not fit his clothes as to say that the child does not fit the school. On high authority we have it that the law is made for man, not man for the law. It is one of the tragedies of human institutions that they tend to become formal and mechanical, that they tend to gather about them people who have a vested interest in their perpetuity in unchanging form. Then strange and inconsequential reasons are urged in behalf of this perpetuity of form, and minds are closed to the values of alternative procedures. Productive energies are diverted from the evaluation of new ideas to the prolongation of ideas which were once new but which have ceased to be vital.

I find that my topic this afternoon embraces two ideas and involves the relating of these two ideas. I am going to talk to you about disciplinary values in their relation to individualized education.

At the outset I want to make it perfectly clear that, in my judgment, there is no education, in the sense in which we use the term, except individual education. Learning is a larger word than teaching. In fact, there is no teaching without learning, and learning is as personal as the endocrine glands. It follows, therefore, that any reference our term "education" has to teaching and administration (which is nothing more than the organization and supervision of teaching) acquires its significance from its relation to learning.

I have said that learning is an individual matter. It may take place in a hundred ways without teaching, but so far as teaching actuates it, teaching is itself individual. We have heard much about mass teaching, mass instruction. There is no such thing. It is true that teaching may be addressed to a roomful of students, but since it is not teaching unless learning takes place, it is merely simultaneous teaching, the amount and value of which is found in the summation of simultaneous learnings going on in the individual organisms within the sound of the teacher's voice.

Accordingly, when we speak of individualized education we do not imply that any education can be other than individual, but rather that some education takes more intelligent account of the individual. This is nothing more than to say that some education is more effective. The degree to which an educational plan involving administrative, instructional and curricular procedures, conveys a personal message to the

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individual, is the degree to which that educational plan is effective. Whether the number of students who come under its influence be one or many is an item in educational economics rather than in educational theory.

There was a time when there was a teacher for every student. The pedagogue and his young master walked the streets of Athens and Rome. The scions of noble houses in the Middle Ages each had his tutor. The social implications of the Renaissance and afterwards of the Industrial Revolution were nowhere more apparent than in education. The number of students seeking the ministrations of such educational institutions as existed precluded a continuation of the tutorial system in anything like its earlier form. Clever schemes in the interest of low cost, like those of Bell and Lancaster, were devised. Out of this came a new development—the graded school. When Horace Mann espoused the cause of the graded school he was doing so in the interest of a more intelligent individual education. He believed that in such a school children and young people would constitute sufficiently homogeneous groups in each of the grades to give the teaching maximum individual appeal. Two movements ensued. One was the hardening and formalizing of the graded school system with its schemes of marking and promoting; the other was a refining of the idea of individual differences. New ways of appraising such differences and a new appreciation of the importance of differences hitherto held to be small convinced educational thinkers of the insufficiency of the graded system, especially as that system acquired more and more unmistakably the attributes of the lockstep.

Out of the measurement movement came, as almost the first result, a consciousness of the wide differences and intricate patterns of individuality, and at the same time a development of more effective means of dealing with these diversities. Individual teaching is just as truly the only teaching now as it was in the days of the tutor for the nobleman's son. I know of no better test of the artist-teacher to-day than the test of the extent to which he reaches each individual with a personal message while continuing to lead a large group.

In summary, the term "individualized education," as I use it, does not set off one type of education of an individualized character from another type of education which is not individualized; the term simply means the type of education which is highly and competently individualized.

If, therefore, we are seeking for disciplinary values in individualized education, we really are seeking for such values in a superior type of education which is consciously and intelligently addressed to students known to possess, each in his own way, specific interests, needs, purposes and attitudes.

It is a bit difficult to define disciplinary values, but it is not difficult to understand the general meaning of the concept, nor is it difficult to detect disciplinary values when we see them in action. It is more or less like the concept of number. Mathematicians, I am told, no longer define number. The concept has become so big, the domain of number so broad, that no language general enough to embrace the concept in all its ramifications can be martialed into a definition that has meaning. This is no unusual occurrence. Not long ago I sat through an entire session of the American Psychological Association while the members were wrestling with the definition of intelligence. No one appeared to be able to give a definition of intelligence which was acceptable to any one but himself. Similarly, there was a failure to define psychology until somebody offered the suggestion that psychology is what a psychologist does.

In an older and supposedly simpler day disciplinary values would not have been

difficult to define. I am referring to the days when a certain doctrine was held which we afterwards called formal discipline. It is interesting to note that the term, formal discipline, was not a contemporary one; it came into use in a more liberal age as a term of opprobrium.

I was taught as a young man that John Locke was fool enough to believe in formal discipline and that Johann Herbart knocked the idea in the head. It seems, however, that the idea was only stunned, because it came to life and had to be executed again by William James and E. L. Thorndike.

More recently I have doubted whether John Locke, so keen in other respects, was so simple in this. As for Herbart, I have never quite succeeded in understanding why his doctrine was supposed to settle the matter. James came to stand in my mind for a brilliant intuitionist whose one experiment bearing on the matter was inconclusive; and Thorndike, treating of formal discipline as transfer of training, left many a loophole through which it might creep and become effective.

I do not propose to support in this year of grace the conception of formal discipline from which a revolt was staged in the late nineteenth century, but I do not believe that all the things that were said against it were true. More specifically, the milder successor to formal discipline, known as transfer of training, can not in reality be denied. Learning done at one time and in one place has its effect at other times and in other places; and it is astonishing that any theory should have denied this. As a matter of fact, it is difficult to see how mental life could go on without transfer. The mere fact that a skill or an attitude learned in situation A does not manifest itself automatically in situation B, similar enough to make it appropriate, does not at all mean that the learning is ineffective in situation B. The skill or attitude may be learned in situation B much more easily and quickly than would be the case if it had not been learned in situation A—and that is transfer, as indubitably as though the learning sprang into full form and vigor in the B situation.

But I must restrain myself on this matter of transfer, lest I devote my entire paper to what should be merely an *excursus*. My purpose is served when I point out that the disciplined mind—what we have long had in our thought when we spoke of a liberal education—is, in reality, an affirmation of the potency of transfer. Sometimes a great research organization may devote itself not to an attack upon the existence of transfer, but rather to the amazingly fruitful topic of how we may most benefit by transfer.

Disciplinary values then are the residuals of learning. Somebody has spoken of them —or it may have been of a liberal education—as what you have left after you have forgotten all you learned. In its best sense, this is a series of character traits—tolerance, open-mindedness, vigor of intellect, truth of emotions, restraint in action. The patterns of behavior in the person who possesses true disciplinary values are as well marked and as highly prized as they are subtly elusive. Those who have sought to define these residuals merely as a knowledge of the best that has been done and said have fallen far short of a true definition. The Great Tradition is a noble tradition. The heritage of the past is a noble heritage. But man can not find complete satisfaction in any tradition, however great. Nor will his heritage remain noble unless he adds something to it on his own account.

One of the ways in which disciplinary values are sought in school and college is through the establishment and maintenance of exacting standards. It is held that the world is a competitive world and that preparation for life in such a world should include the opportunity to strive, to fail if one must and to succeed in greater or less degree, all in the face of the strivings, the

failures and the successes of one's contemporaries. It would take us too far afield in the time at our disposal to examine the doctrine of preparation for competition by introducing competition into the schools. I wish, however, to point out that to a greater degree than is desirable the competition demanded in our schools, with their grade levels and their credits, is an artificial competition gratuitously introduced by the system and for the system.

Consider, for example, our eight-year elementary school. Here is an organization stratified in a wholly artificial way, the like of which can not be found anywhere in the social order. It is true that an individual may pass from a lower to a higher class in this curious social arrangement, but the institution which maintains this arrangement prides itself on the obstacles which it places in the way of this passage from lower to higher levels. It prides itself upon these obstacles in the name of the maintenance of standards of scholarship.

A friend of mine who was a superintendent in a middle-sized city boasted that no pupil of his, when transferred to another city, had ever been put back to a lower grade. The fact that his schools had abnormally high rates of retardation and abnormally low rates of promotion gave him no uneasiness. He hugged to his soul with satisfaction the bleak and sterile fact that such pupils as he had permitted to advance to a given grade were up to the standards of that grade anywhere else.

A high-school principal in a metropolitan district observed that year after year the freshmen who entered his high school from a certain elementary school were especially strong in English. After observing this long enough to be sure that there was no mistake about it, he gave the head of his English Department three days' leave of absence to study conditions in this fortunate elementary school and to find out the cause of its success. The head of the English Department returned at the end of the first half-day. His report, though brief, was precise, accurate and to the point. "They kill 'em off," said he. This elementary school should have been graduating four to six classes a year, for it was a very large school. It was, in fact, graduating but two classes. The fearful price paid for the maintenance of what this school regarded as standards was a price paid not by the teachers who instituted the practice but by the hundreds of children who were debarred from an opportunity to experience the richer curriculum of the secondary school.

Such is the manner in which the graded school of which Mann had such high hopes has been stratified and formalized. I suggest that a far more sensible plan—sensible because it recognizes the indubitable fact of individual differences—would be to regard promotion merely as the admission of the pupil to a different and, at the moment, more appropriate experience. Grades would then become only variations in curricular offerings, and the achievement of the pupil in the curriculum from which transfer is contemplated would be but one of the elements leading to a decision as to his transfer. What I am pleading for is the recognition of a principle in virtue of which we shall promote children, not so much on the basis of what they *have learned* as on the basis of what they *need to learn*. I urge that more consideration be given to the interests and purposes of the children themselves and less consideration to standards extrinsic in their nature, institutional in their origin and purpose, and unnatural, because unchildlike, in their application.

Let us now turn to the curriculum and see what bearing certain types of material particularly rich in individual appeal may be expected to have on disciplinary values.

One of the most striking of modern movements in education is that which seeks to reconstruct the curriculum; and among the

progressive principles operative in such reconstruction is the principle of integration.

Integration denies in greater or less degree the necessity, at least for school purposes, of the subjects of study as these have been organized during the last 2,500 years. I think the integrationists, or fusionists, as they are frequently called, have a strong case. The classification of human knowledge as we have it, from astronomy to zoology, is largely fortuitous. It represents a long series of experiments, intuitions, ingenious theories, leadership, publicity and lucky breaks. The list of recognized subjects has grown enormously. Many of these subjects are vague in outline and rambling in structure. Some overlap upon others. There is nothing inevitable in such a congeries. It taxes one's credulity to believe that if human beings had the classification of human knowledge to work out *de novo*, they would or could duplicate their present achievement.

When, therefore, the subject-matter specialists cry out against the integrationists we are justified in asking them to show a better cause than the defense of their subjects. Again it is proper to point out that the law is made for man.

This, however, is a long way from sanctioning every kind of integration. The progressives who talk so easily about compartmentalized subject-matter and who invent so many new names for ways of regrouping facts and principles are perhaps too facile in their demand that human culture shall be revamped. It is perfectly possible to accept the doctrine of integration without accepting the first crude application of it.

I am convinced, in principle at least, of one thing in this matter of integration; namely, that the subject-matter specialists are wrong when they deny that an integrated program may offer disciplinary values of a high order. Consider, if you please, the way in which such a program has been lately set up in the Virginia course of study.

Here is an attempt to classify subject-matter according to the things that society does. One of the great ideas under which the actions, thoughts and emotions of men, individually and in groups, may be subsumed is the idea of *protection*—the protection and conservation of life, of human rights, of property and of natural resources. Protection is one of the aspects of society in action. Moreover, it has been one of the aspects of human society as long as human society has existed.

Suppose now we organize subject-matter —facts, concepts and generalizations— under the heading of protection. In other words, suppose we set up protection with a capital P as a subject in our curriculum. Isn't it entirely possible to teach this subject and isn't it entirely possible to learn it with all the rigor of a traditional subject? Can it not be made as dignified, as exacting, as internally consistent as any subject with which pupils are likely to deal? In short, may it not have all the disciplinary values of the older subjects? It is my judgment that it can. Even if it can not—even if as rigorous a pattern may not be pursued with the same unrelenting fidelity that the older subjects already permit—there are nevertheless other considerations which seem to me to give a functional aspect of society the promise of large educational returns, including values called disciplinary.

In the first place, such a subject can be offered in a challenging way to the immature child; yet it is equally capable of challenging the best effort of the mature student. In other words, it has something for everybody. It does not, as so many of the older subjects do, exclude from its contemplation the immature and the feebly endowed. Indeed, the more immature and feebly endowed an individual may be, the more definitely he needs protection and appre-

ciates what it is in its essentials. If the doctrine of need, about which we hear so much these days, has any cogency, if it offers any appeal as a valid basis for the selecting and organizing of school experience, then I submit that protection has a claim upon our attention.

It is not difficult to outline the way in which this functional aspect of society (now thought of as a subject in the curriculum) may be worked into the course of study. Broadly speaking, this can be done on the basis of the known centers of interest at different levels of the pupil's maturity. Perhaps the earliest application of protection, both in the race and in the individual, is found in the home. As a center of interest suitable for young children, the home and the family life are especially recommended; and protection is at once recognized as an essential function of the home. Not inappropriately, therefore, the immature child may be brought to think and talk and read and write about protection in the home.

The child who is somewhat more mature may properly consider the community—first the neighborhood and later the remoter community—as it protects its members. He may then see the community doing things which isolated individuals could not do; things which add to the security of life and property.

This simple outward development of the idea of protection from the home to the larger community is only one of the ways in which the idea may be projected on the more mature levels. For example, the concept of adaptation to environment offers a rich and appropriate center of interest in the middle and upper grades of the elementary school; and this adaptation, as regards both sub-human and human forms of life, is largely for purposes of protection. And so we may go on with the subject which I am calling protection and relate it to matters suitable to the interests of pupils of various degrees of maturity. We may show its relation to inventions and discoveries, many of which are made for purposes of protection, to machine production, to social provision for cooperative living; and through all these ramifications of our subject we may treat it in its relation to time (that is, historically) and in its relation to space (that is, geographically).

I have said that in the first place a subject such as protection can be offered in a challenging way at various levels of the learner's maturity. Other subjects may likewise be selected as indicating the way society works. *Production* is thus a functional aspect of the social order and is capable of treatment for every level of maturity from that in which the home is an appropriate interest to that which can envisage the larger community, adaptation to environment, the effect of the power age, and so on. *Consumption* is another broad concept which, like protection and production, may serve as an organizing principle for subject-matter. We are all consumers. The home is a consumer. So is the neighborhood, and the larger community. Through trade one community furnishes goods to be consumed by another and thus secures a high order of adaptation to environment. The consumption of goods is profoundly affected by inventions and discoveries. Perhaps I have said enough to indicate my faith in the possibility of utilizing the functions of the social order as challenging bases of the selection of subject-matter for all levels of maturity.

In the second place, if subject-matter is organized according to the things which society does, if, to be more specific, we recognize as subjects such organizing principles as protection, production, consumption, communication, recreation, the expression of esthetic impulses and so on, we at once secure subjects which are not to be studied for a semester or a year but for a whole series of years. Some of them may be

studied for the entire twelve years of the organized public school. That this would be an advantage is believed by all those who in one way or another are trying to reorganize the curriculum so that it shall present fewer and broader subjects. The belief is widely held—indeed, I think it is held by both conservative and progressive, each in his way—that the continued study of a subject has disciplinary and cultural values which a flitting from one subject to another can not produce. The classical conservatist sees in the long pursuit of Greek, Latin and mathematics values which arise from studying one subject long enough and hard enough to secure its inner connections. There is a good deal to be said for this point of view. The progressive, on the other hand, would have us pursue subjects which he calls strands. In organizing these subjects or strands, he oversteps the boundaries into which human thought has been more or less accidentally divided and selects material for what he regards as a higher and more purposeful integration.

The point I am seeking to make is this: that in the adoption of types of functional activity on the part of society as organizing principles of the curriculum, we may secure not only the advantages which the progressive talks most about but also those disciplinary values so dear to the heart of the conservative.

In the third place, subjects of the sort with which I am now concerned continue to have students after the period of school life has ended. Normally this is not true of the older subjects. Ask a college senior a question about physics and he will content himself with saying that he had physics in his sophomore year. Ask a friend about a poem of Wordsworth's, and he will be satisfied to tell you he majored in English literature in college. Does the professional man remember his trigonometry? Does the man on the street remember his arithmetic? Can the star student in Latin read Juvenal or Pliny to-day? It is true that the subjects we pursued in school and college, and which we doubtless insist that our children shall pursue, represent a high humanistic tradition. But the pathetic fact is that they are quickly abandoned and unremembered. The college senior, the graduate of ten years' standing, the friends and acquaintances whom you encounter in day-to-day contact, are likely to tell you that they studied, that they had, that they majored; but the studies to which they refer are thus safely tucked away in the past tense. To most people the school subjects are only a memory.

I have called this condition the greatest waste in education—a waste compared with which financial blunders, retardation and elimination, fads and frills, are as nothing.

One may suggest as a remedy that men and women ought to continue at least some of the fine things they studied in school and college; that in the modern foreign languages or in English literature, or even in Latin, the copybook maxim, "Nulla dies sine linea," should be a rule of life. It is doubtful, however, if any large number of our people, even under the impact of adult education, can be induced to follow such a rule.

Another way is to offer our children and young people subjects which will continue to occupy the attention of every thinking man or woman after school days are over. The type of subject-matter which I have suggested, organized in the manner proposed, seems to give promise of this through its appeal to every type of individual, each according to his nature and competence. Moreover, by setting up an abiding frame of reference, it bids fair to secure the disciplinary values arising from the steady contemplation of large and vigorous ideas. If, as most of us believe, it is a function of the school to inspire boys and girls as well as to give them facts, to lift their eyes to the hills, as well as to lower them to the book page, then the attractiveness of a pro-

gram wide in its range, generous in the catholicity of its appeal, and dynamic in its drive, will be seen to be capable of indefinite adjustment to individual differences and at the same time to promise enduring disciplinary values.

CORNELL UNDER LIVINGSTON FARRAND

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THE retirement of Livingston Farrand as president of Cornell University in June, 1937, marked the close of a truly illustrious chapter in the history of that institution. His administration, which began in the fall of 1921, was one of significant achievement against a background of swiftly changing social and economic conditions. The boom of the 'Twenties and the succeeding depression divided his presidency into sharply contrasted halves, each with special problems and special opportunities.

When Dr. Farrand was inaugurated as the university's fourth president on October 20, 1921, Cornell was in the midst of the greatest building program in her history. The construction of Founders Hall, Boldt Hall and Lyon Hall in the men's dormitory group had been authorized; ground had been broken for the Baker Chemical Laboratory; and funds provided for the erection of the Johnny Parson Club. Within a year came the completion of a new heating plant and the Dairy Building, and the gift for Willard Straight Hall as a social and recreation center.

The university's physical plant was further augmented before 1929 by the erection of Boldt Tower, the War Memorial towers and cloister, and McFaddin Hall to enlarge the dormitory facilities for men; the Balch residential halls for women; the Plant Industries Building provided by the State; and Myron C. Taylor's gift for a new Law School building. Improvement of the Campus grounds and adjoining gorges was also begun with funds provided by interested friends of Cornell.

During the same years an imposing medical center was taking shape in New York City. In 1927 the Cornell Medical College joined the New York Hospital in an association that included the erection of a new building and a considerable increase in endowment, and two years later the New York Lying-in Hospital became part of the group.

The beginning of the depression ended this period of physical expansion and brought the new problem of maintaining the efficiency of the plant and equipment and protecting the educational and research programs and personnel, while drastically curtailing the cost of operation. The only major construction initiated on the Campus since 1929 has been Mennen Hall in the men's dormitory group, a much-needed addition to the University Library, and buildings provided by the state for the College of Home Economics, the Department of Agricultural Economics and a laboratory for the Veterinary College. Emphasis was placed rather on remodelling projects, designed to decrease the cost of heating, lighting and other services, and on beautifying and increasing the usefulness of the grounds.

The material progress of the university during the entire period is summarized in the official figures. On June 30, 1921, Cornell's endowment was $17,188,177, of which $5,003,176 was for the Medical College in

New York City. On June 30, 1937, the endowment had increased to $30,975,376, with the Medical College's share $11,213,425. Buildings, grounds, equipment and residential halls, appraised in 1921 at $10,208,385, were listed in 1937 at $26,373,360.

SOLICITUDE FOR THE FACULTY

Physical expansion, however, was never considered by President Farrand an end in itself. To him the university was fundamentally a company of scholars banded together for the discovery, organization and dissemination of truth, and the welfare and effectiveness of the faculty were always of paramount importance.

During his administration, group insurance was made available to the staff; progress was made on a plan to provide retirement allowances; additional funds for research came through gifts, bequests, foundation grants and government subsidies; and the University Library, though hard pressed for funds, remained one of the first six in the United States. Because of the exceptionally able management of the university's finances, salaries were cut less during the depression than at many other institutions, and increases could still be offered under special circumstances to hold outstanding professors.

These developments tended to alleviate what might otherwise have been a serious crisis, because a large number of professors had to be replaced. Many members of the faculty who had lent special distinction to Cornell under President Jacob Gould Schurman were lost by death or retirement, and many departments had gradually undergone an almost complete change in personnel. That the necessary changes had been well managed was indicated by a recent survey of graduate instruction in American universities prepared by a committee of the American Council on Education. Cornell was rated distinguished in sixteen fields and adequately equipped in nine more, the university as a whole ranking among the seven best in the country.

The administrative machinery of the university was also strengthened under President Farrand's direction. Directors of admissions, of public information, of the new Graduate School of Education and of the unified Summer Session were added, and successors found for officers who died or retired. Of the general administrative staff, new deans of all the colleges, the university librarian, the dean of women, the superintendent of buildings and grounds and directors of the Schools of Civil, Mechanical and Electrical Engineering, of the College of Home Economics and of the Agricultural Experiment Station at Geneva took office during his administration, and numerous changes were made in department heads.

IMPROVEMENTS IN INSTRUCTION

Never attempting to interfere with the Cornell tradition of faculty responsibility for the conduct of the academic work of the university, Dr. Farrand fostered individual and group initiative and at the same time encouraged general policies of great significance. Sharing the faculty's belief that Cornell should seek students of higher quality rather than a general increase in enrolment, he sympathized strongly with the programs of selective admission inaugurated by nearly all divisions of the university during the early years of his régime. This policy, besides achieving its primary purpose, also avoided an over-expansion of the teaching staff before 1929 and prevented a serious falling off in enrolment during the depression years.

Limitation of student enrolment, together with fluctuations in the university's income and the recognition of new social needs, brought about significant advances in Cornell's academic program. Cooperation among the colleges toward better integration of broad fields of instruction and research has been especially noteworthy.

In 1931 complete integration of the work of the Department of Rural Education in the College of Agriculture and the Department of Education in the College of Arts and Sciences was effected. A single head was appointed for both departments, and the same man became director of a new Graduate School of Education, so that the supervision of both undergraduate and graduate training of teachers for all types of positions might be concentrated and all duplication of effort eliminated. In 1934 the summer courses in state and endowed colleges were combined into a University Summer Session with a director and a board of control.

Landscape architecture, once given both by the College of Agriculture and by the College of Architecture, was concentrated in the latter division, where it has become an integral part of a broad program emphasizing in concrete terms the interrelationships between buildings and their surroundings. The College of Architecture also inaugurated a curriculum leading to the degree of bachelor of fine arts and in 1927 opened a series of non-technical courses to students in other colleges of the university.

Two years later the College of Arts and Sciences established a Department of Music. Emphasis on dramatics in the Department of Public Speaking had also been increasing rapidly, so that by 1934 it was possible to set up in the College of Arts and Sciences a complete curriculum in fine arts, including literature, esthetic theory, dramatics, music and the visual arts of drawing, painting, sculpture and architecture. Cooperation between the Colleges of Architecture and Engineering also led to the establishment in 1934 of courses in regional planning, open to students of all divisions.

Important advances were also made within the various colleges, as courses and curricula were continually remodelled to meet changing conditions. The College of Arts and Sciences introduced a system of informal study and, after careful investigation, revised its curriculum to allow specialization in a major field and related study to begin in the sophomore year.

The College of Engineering announced in 1929 a new curriculum in chemical engineering and in 1931 one in administrative engineering. The active operation of a broadcasting station equipped by the General Electric Company and the Westinghouse Corporation, begun in 1929, gave the opportunity to expand work in radio communication; and in 1935 the college established senior options in air-conditioning, aeronautics, metallurgy and automotive engineering.

The Law School raised its admission requirement from two years of liberal arts to a baccalaureate degree, except for students in Cornell, who are allowed double registration in the senior year of arts and sciences. Students are now held to more rigid standards of accomplishment by various means, including a comprehensive examination in the third year; and graduate work is offered toward LL.M. and J.S.D. degrees. The Veterinary College now demands a year of liberal arts before admission, and the College of Architecture has lengthened its course from four to five years.

A separate state college was established in 1925 to carry on the program in home economics, which had included since 1922 courses in hotel administration. An important recent development has taken place in child training and parental education, which was fostered in the early stages by a grant from the Laura Spelman Rockefeller Foundation and now constitutes a well-rounded Department of Family Life.

New buildings, expansion and strengthening of research and teaching in the basic sciences and their applications to agriculture, enlargement of all departments and greater emphasis on extension work have been important factors in the progress of the College of Agriculture. New buildings

permitted the housing of related departments in groups and the close correlation of scientific research with classroom instruction. Development has been especially marked in the plant sciences, animal biology, dairy science, agricultural economics, soil science and rural education.

During this same period the New York State Experiment Station at Geneva, which had previously been an independent institution, was placed under the administration of Cornell University by act of the State Legislature.

The years 1935 and 1936 saw a sweeping reorganization of physical education and athletics. The university, after thorough study, assumed full responsibility for the entire program and placed a director at the head of the new division. Since then the coaching staff has been rebuilt and a comprehensive schedule of intramurals promoted to interest all students in active participation in sports.

Other projects closely allied to the academic work of the university include the establishment of a Cornell University Press in 1927 and the acquisition of the Comstock Publishing Company, which came to Cornell in 1931 by bequest; the organization of a University Placement Bureau in 1933 to aid both undergraduates and alumni and to handle the National Youth Administration program; development of an arboretum; improvement of the facilities for taking care of student health; and the establishment of important lectureships under the Hiram Messenger and George F. Baker Funds.

Encouragement of Research

Dr. Farrand always was sympathetic in his support of research, which he recognized both as a means of discovering and organizing knowledge and as a method of enriching the content of graduate and undergraduate courses. His administration saw a closer coordination of the work of the Agricultural Experiment Station at Geneva with research projects on the Ithaca Campus; the establishment of an Engineering Experiment Station which, with support from a $500,000 Henry H. Westinghouse trust fund and with graduate research workers supplied through the McMullen Fund, pushed investigations into electronomics (basic to radio), soil mechanics and flood control, heat transmission and air-conditioning, sanitation and internal stress analysis of structural members by photo-elastic methods; a considerable increase in state aid for studies by the veterinary staff of diseases of dairy cattle and poultry; the stimulation for several years by the August Heckscher Fund of scores of individual projects, particularly in the College of Arts and Sciences; and the establishment of the Cornell Research Foundation to handle certain patents on discoveries made by faculty members.

Other Cornell traditions were deepened and strengthened. Public service by members of the faculty was offered freely, and a large number held positions with federal, state and local governments, acted as members of special commissions and as technical advisers on various projects, and in many other ways filled important rôles in shaping and administering policies of public interest.

The university has continued to attract students from all the states of the Union and many foreign countries and thus to maintain both the cosmopolitan atmosphere of the Campus and an educational influence international in scope. Success in aiding intelligent but needy students increased as benefactors gave additional scholarships and loan funds. Especially noteworthy were the scholarships founded by the $200,000 bequest of George W. Lefevre and the regional scholarships for engineers provided by the munificent bequest of John McMullen.

In 1930 Cornell alumni set a record that has never been surpassed by those of any other university, when more than 10,000 gave to the Alumni Fund; and they have

continued to give liberally each year, even through the depression. Alumni also helped to select McMullen regional scholars, initiated and successfully carried out the annual Cornell Day programs, and attained new highs in attendance at reunions and in other efforts to serve Cornell.

These achievements were made possible by the united efforts of trustees, faculty, alumni, students and other friends of Cornell; yet they reflect the general nature of Dr. Farrand's ideals. A man of narrower vision and less administrative skill might have failed to preserve the spirit of unity that has pervaded the university, and a man of less intellectual and moral courage might, under the pressure of conditions during the last few years, have weakened the basic Cornell tradition of sincerity and freedom in research, instruction and public utterance.

EDUCATIONAL EVENTS

THE GORDON MEMORIAL COLLEGE AT KHARTOUM

Two reports on the educational policy of the Sudan have been issued and are summarized in the London *Times*. Lord De La Warr's Commission, which issued its Report on Higher Education in East Africa in the autumn, was invited to visit the Sudan on its homeward journey "to inquire and report on the curriculum, staff and organization of the Gordon Memorial College at Khartoum, and to review the method and organization of the elementary and intermediate school systems in relation to the Gordon Memorial College.

The *Times* writes:

The commission considers that the time is ripe for making those beginnings out of which a university will eventually develop. An intermediate step in the development of the university will be the establishment of a university college, and the commission urges that the elements of the future university college should be centered now in the Gordon College building; it expresses the hope that, after a period of development, the new Gordon College will earn the right to be known as the Gordon Memorial University College, Khartoum. "By utilizing Gordon College in this way the original purpose of the founders would be carried out and an imposing aggregation of buildings, worthy of university college status and suited to the needs of a university college, would be gradually assembled."

As a condition of this development the secondary school, which at present occupies the greater part of the college building, should at once be transferred to another site. "We are confident that given good will and determination on all sides the achievement of the organized university college which we have proposed is possible within reasonable time; and we are confident that the resultant benefit to the Sudan will repay a hundredfold the efforts involved."

The commission pays a tribute to the quality of the advanced education given at the Kitchener School of Medicine, "which has gone far towards achieving the standard of a full medical degree," and considers this school a worthy model for the other post-secondary courses which have recently been instituted and for the successful passing of which the Sudan should similarly issue its own diplomas. Great emphasis is placed on the need for aiming from the first, in these courses, at a standard not lower than that required for a British professional qualification; and for ensuring high standards the importance is emphasized of keeping classes small and of associating external examiners of recognized standing with the Sudan examiners.

"The authorities of the new Gordon College will have to choose between speed and quality in their endeavors to secure the distinguishing privilege of a university—the right to grant degrees. If the Sudanese were content with a degree of low quality which would secure no recognition from universities of repute, it would be possible to begin granting such a degree in the near future. If, however, the degree which is ultimately granted at Khartoum is to secure wide recognition as a qualification of university standard, the Sudanese must face with patience the period which will be necessary to establish high standards and to prove them to the outside world." An essential prerequisite for such a program is the immediate grading up to full secondary standard of the existing secondary school system.

SURVEY OF BRITISH HEALTH SERVICES

A REPORT has recently been published by "Political and Economic Planning," which con-

sists of a "survey of the existing Health Services with proposals for future development."

The report, according to the London *Times*, begins its survey with maternity and child welfare. It is pointed out that while death-rates from most causes have declined since the war, maternal mortality has slightly increased. There is now one maternal death to about 260 live births.

There are some 3,400 infant welfare centers in England and Wales which are visited by some two thirds of the children born. Nearly all children are also visited at home by a health visitor at least once during the first year of life. Neither the centers nor the health visitors undertake treatment, and there is no provision for treatment under the National Health Insurance Acts. The report points out that Scotland possesses a service in which midwives, general practitioners and specialists are associated; both a departmental committee and the British Medical Association have made proposals on similar lines for England and Wales. It is recommended that these proposals should be put into effect.

Local authorities have power to provide nursery schools for children of two years and over, but there are only 7,000 children in such schools in England and Wales. Thus, according to the report, a gap exists between the care of infancy and the medical care of the school child, which begins at five years. The School Medical Service is now 30 years old. The Minister of Health is responsible for it, but delegates the task to the Board of Education, which supervises the work of the local education authorities. At least three medical inspections take place during each child's school life and some facilities for treatment exist. But here again there are "serious gaps"—for example, "less than three quarters of the school children in England and Wales are dentally inspected each year."

Other sections of the survey treat problems of the general practitioner in relation to the public health service, of the hospital and of diet and health.

A NEW NATIONAL POLYTECHNICAL INSTITUTE IN MEXICO

FRANK L. KLUCKHOHN, in a wireless message to *The New York Times* dated from Mexico City on January 6, reports the establishment by President Lazaro Cardenas of a new National Polytechnical Institute on which the government will spend at least 2,000,000 pesos the first year.

It is understood that the plan is to make the institute a center at which outstanding professors from Germany, Spain and other countries, who are exiled from their homelands, can teach young Mexicans engineering and the practical sciences.

The plan is to select carefully about 200 well-known exiles, offering them seats on the faculty on ten-year contracts at a salary of 1,000 pesos monthly, which is a comfortable income in Mexico. It is also reported that New York financial interests with holdings in Mexico have offered to contribute to the program.

The declaration of President Cardenas reads:

"For a greater development of superior culture, in the course of the present year the Secretary of Education will create a National Polytechnical Institute and to this end 2,000,000 pesos have been set aside."

The Department of Education has issued a statement with regard to the purposes of the school from the Mexican viewpoint in which the two principal objectives were stated to be:

"(1) To provide wider educational facilities for the proletarian class which vitally needs a school of this kind. The school will give social orientation to this class and a better country economically. (2) It is necessary to provide trained Mexicans for the progress and development of industries, some nearly unexploited and others lacking national professional men. The scientific basis for a solution of the multiple problems of a technical nature facing the nation can be solved by the establishment of this institute.

"Young men of more or less wealthy families have been the only ones who have been able to obtain a professional education and follow professional careers in Mexico and this has put the physical development of the revolution more or less in their hands. The outstanding young men of the proletarian class are the type needed for the success of the land and public works program.

"For progress the country needs urgently young men capable of directing industrial concerns, technical experts in all offices and competent and qualified workers who take pride in the work of social utility. Mexico not only has multiple non-exploited raw materials but trained

technical men can increase production in Mexico of the things already being produced.

"The field for technicians in Mexico is unlimited but besides the problems of an ethnic, economic and political nature foreign influence has blocked the forward march of our country. This condition is now changing."

DECREASE IN ENROLMENT OF THE BALTIMORE SCHOOLS

THE Maryland State Department of Education reports that the number of children in the public schools of the state is decreasing, but that the number of Negro students is increasing.

According to a report in the Baltimore *Sun*, tentative figures for the 1937–38 school year show a drop of 3,149 pupils from last year and 3,916 from the year before. In 1935–36 there were 298,157 pupils, 297,390 in 1936–37 and the estimate for 1937–38 is 294,241.

The figures show that the number of Negro children increased 631 over last year and 1,267 over the 1935–36 school year. In 1935–36 there were 58,376 Negro pupils, 59,012 in 1936–37 and there is an estimated 59,643 in 1937–38.

White elementary school enrolment decreased this year as well as last year in both Baltimore and the counties, but white high-school enrolment continued its steady rise in the counties. White high-school enrolment in Baltimore decreased slightly.

Negro elementary school enrolment decreased in the counties, continuing a trend begun several years ago, but increased enough in Baltimore for a total net gain. Negro high-school enrolment increased both in Baltimore and in the counties.

Enrolment in white elementary schools in 1936–37 was 110,955 in the counties and 75,118 in Baltimore. For 1937–38 the enrolment was estimated at 109,365 in the counties and 72,639 in Baltimore.

For purposes of comparison, Dr. Albert S. Cook, state superintendent of schools, pointed out that all grades in Baltimore city below the last four years of high school were counted as elementary grades, as in the counties.

Eight counties—Baltimore, Allegany, Prince George's, Montgomery, Anne Arundel, Harford, Howard and Calvert—had higher white elementary school enrolments in 1936–37 than in the preceding year. Estimates for the present year were not available.

The largest increases were in Prince George's and Montgomery counties, reflecting the suburban growth of the Washington area. Prince George's increased from 8,937 in 1935–36 to 9,538 in 1936–37, and Montgomery from 8,620 to 9,039.

NON-RESIDENT STUDENT FEES AT THE UNIVERSITY OF WISCONSIN

THE University of Wisconsin has endorsed a plan for reducing its non-resident tuition fee. With certain qualifications in the case of both undergraduates and graduate students who come from other states to the university for higher education, the plan is to be tried out as an experiment for the academic year 1938–39.

It provides that the present non-resident tuition fee of $200, one of the highest in the country, be reduced to a reciprocal fee with other states or to $100, whichever is higher, in the case of undergraduate students who have attained sophomore standing, and have had at least one year's work at Wisconsin, and who have earned a 2.0 grade-point scholastic average during their last year at the university.

The non-resident fee would be reduced similarly in the case of graduate students who enter Wisconsin with a 2.0 grade-point scholastic average in accredited institutions for their undergraduate work, and/or have earned a 2.0 grade-point scholastic average in work at Wisconsin during the preceding year.

The non-resident tuition of $200 per year was set by the 1927 legislature, but this law was amended by the 1937 legislature to permit the university to enter into the reciprocal agreements with other state universities, so that Wisconsin's non-resident tuition would not be any higher for residents of a certain state than that which Wisconsin residents would have to pay to study in the university of that state.

It is pointed out that the new plan would not apply to freshman students entering the University of Wisconsin from outside the state, since they must have first attained sophomore standing before being exempt from the present $200 non-resident tuition.

The plan was drawn up by a faculty non-resident tuition committee, consisting of Harold M. Groves, *chairman;* A. W. Peterson, W. B. Sarles, W. R. Sharp, E. B. Fred and Registrar Curtis G. Merriman.

COLLEGE TRAINING FOR RECREATIONAL LEADERS

A CONFERENCE on the college training of recreational leaders was held at the University of Minnesota on December 9, 10 and 11, at the joint invitation of Dr. C. Gilbert Wrenn, chairman of the committee on training for recreation leadership of the University of Minnesota, and Dr. E. C. Lindeman, director of the Recreation Division of the Works Progress Administration. The conference was composed of invited delegates from twenty-five universities in twenty-two states, together with a number of government officials and public recreational leaders. The work of the conference revolved around the work of five committees as follows:

"College Curriculum for Training Recreation Leaders," *chairman*, C. Gilbert Wrenn, University of Minnesota.

"Organization and Administrative Relationships," *chairman*, Chester Bower, University of Louisville.

"Training Methods," *chairman*, Jay B. Nash, New York University.

"Training Program in Teacher Training Institutions," *chairman*, William McAndrew, Southern Illinois State Teachers College.

"Research Projects," *chairman*, Elmer Mitchel, University of Michigan.

The reports of these committees were considered by the conference and they, together with a summary of the discussion and of addresses by Dr. Lindeman and Dr. M. S. MacLean, are being edited for publication. In addition to outlining a college curriculum for training recreational leaders, a number of research projects are being proposed to those interested.

An interim committee to plan a second conference is to be appointed by Dr. Lindeman and Dr. Wrenn, with the latter acting as chairman. The 1937 conference, held in the new center for continuation study at the University of Minnesota, was subsidized by grants from the Russell Sage Foundation and the Doris Duke Foundation.

FELLOWSHIPS IN JOURNALISM AT HARVARD UNIVERSITY

THE bequest to Harvard University of about $1,000,000 left by the late Mrs. Agnes Wahl Nieman, widow of the founder of *The Milwaukee Journal*, specifically "to promote and elevate the standards of journalism in the United States," will be used to establish fellowships enabling experienced newspaper men from all parts of the United States to study at Harvard University on leave of absence from their papers. The committee named by Dr. Conant to administer the fellowships consists of three members of the Harvard Board of Overseers—John Stewart Bryan, of Richmond, Va., publisher of *The Richmond News Leader*, president of the College of William and Mary and formerly president of the American Newspaper Publishers Association, *chairman;* Ellery Sedgwick, of Boston, editor of *The Atlantic Monthly*, and Walter Lippmann, of New York, journalist.

The fellowships are not expected to number more than twelve or fifteen in any semester. They are designed to enable reporters, editorial writers and special writers of at least three years' experience to take any courses in any department or school at Harvard and to supplement this with private reading under faculty advisers.

It is expected that at least one fellowship will be awarded to men from each of the six large sections of the country—Far West, Middle West, Southwest, South, Middle Atlantic and New England.

The report made by Dr. Conant to the board of overseers said in part:

> New gifts for special purposes bring with them new responsibilities. . . . The recent Nieman bequest, though it places an additional problem at our door, can only be regarded as a great challenge to this particular academic community.
>
> We are asked to expend the money in such a way as to "promote and elevate the standards of journalism," using journalism in the widest sense of the term. The provisions of the will are very broad; there are no restrictions on the methods to be employed in accomplishing the desired end.
>
> The stipends will be large enough to enable the fellows to be absent from their regular work without too great financial loss.
>
> It is hoped that a considerable number of able men of experience from all over the country will be applicants. The holder of such a fellowship would, of course, be invited to Cambridge only if he had a clear idea of the line of study he wished to pursue.
>
> Thus, a man interested in becoming an expert writer on finance, for example, might choose a year's work in economics; another with the pros-

pect of a career as a foreign correspondent might wish to study history; or an editorial writer might desire to take advanced courses in several fields.

There would be no new courses of instruction offered for these men; through a group of advisers they would be put in touch with the various existing courses and possibilities of study. It is proposed, furthermore, to have this group meet together from time to time in order to share their experience, and it is hoped that various men of eminence in the journalistic world will come to Cambridge for a few days now and then to hold conferences with the Nieman fellows.

To carefully selected men these fellowships should provide an opportunity to develop their talents during a period of study. The presence of a small group of practical and experienced newspaper men in residence is sure to enrich the Harvard community.

The plan is frankly experimental. . . . If found impractical it can be modified or indeed abandoned in favor of some other project which may seem more promising.

THE ANNUAL MEETING OF THE NATIONAL COUNCIL OF EDUCATION

THE National Council of Education of the National Education Association has announced two meetings to be held at the Chalfonte-Haddon Hall Hotel, Atlantic City, on February 28 and March 1. In keeping with its policy of debating an educational problem of major importance, Dean Louis A. Pechstein, of the University of Cincinnati, president of the council, has prepared for Monday afternoon a program on "Democratic Leadership in School Management and Administration." Professor William H. Kilpatrick has made an exposition and defense of the theses to be sent in advance to members of the council. Those who will participate in the discussion are: Charles H. Judd, University of Chicago; William C. Bagley, Teachers College, Columbia University; H. B. Allman, superintendent of schools, Muncie, Ind.; Jesse Newlon, Teachers College, Columbia University; Uel W. Lamkin, Northwest Missouri State Teachers College, Maryville; George S. Counts, Teachers College, Columbia University; George D. Strayer, Teachers College, Columbia University, and E. O. Melby, School of Education, Northwestern University. On Tuesday, "Educational Developments of the Year" will be reviewed by Professor Carter V. Good, of the University of Cincinnati. Both these programs will be followed by open discussion from the floor. The meetings will be open to the public. Attendance of members of the National Council is mandatory.

The latter half of Tuesday afternoon will be devoted to the business session, restricted to members of the National Council. Of especial importance will be the preliminary report of a special committee on policies and program. The personnel of this committee consists of Henry L. Smith, dean, School of Education, Indiana University, *chairman;* H. B. Allman, superintendent of schools, Muncie, Ind.; L. John Nuttall, superintendent of schools, Salt Lake City; Jesse Newlon, Teachers College, Columbia University; Willis A. Sutton, superintendent of schools, Atlanta, Ga.; Cornelia S. Adair, director, Ruffner School, Richmond, Va.; J. M. Gwinn, San Jose State College, California; W. C. Bagley, Teachers College, Columbia University; Thomas W. Gosling, national director, American Junior Red Cross, Washington, D. C.; W. E. Givens, executive secretary, National Education Association, Washington, D. C.

EDUCATIONAL NOTES AND NEWS

DR. FREDERIC ERNST, assistant superintendent of the New York City schools, was elected associate superintendent on January 12. Dr. Ernst has been connected with the schools of the city since 1903 and will now take the place left vacant by Dr. John L. Tildsley, who retired last August. An associate superintendent is elected for a six-year term and receives an annual salary of $12,500.

LANE C. ASH has been appointed adviser in the Division of Industrial Education of the Pennsylvania Department of Public Instruction. He had previously served as instructor in vocational education at the University of Pennsylvania.

THE Heckscher Foundation for Children has recently established a department of hygiene and preventive medicine under the direction of Dr.

Heinz R. Landmann. A child guidance clinic has also been established by the foundation under the direction of Dr. Jacob S. List.

DR. DONALD G. TEWKSBURY, until recently dean of Bard College, Columbia University, at Annandale-on-Hudson, has been appointed chairman of New College, Columbia University. He succeeds Dr. Thomas Alexander, who retires on June 1 to devote his time to the department of education of Teachers College.

ALBERT P. STRIETMANN, Cincinnati industrialist and civic leader, has been appointed by Mayor James Stewart to a nine-year term as a member of the Board of Directors of the University of Cincinnati. He succeeds the Rev. Frank H. Nelson, rector of Christ Episcopal Church, whose term expired on December 31.

FOLLOWING a year's leave of absence, Professor G. M. Fuller, of the department of economics of the Iowa State College, has resigned to become treasurer of the Federal Land Bank of Omaha.

DR. ALEXANDER M. DUSHKIN, formerly director of Jewish education in Chicago, has accepted the post of director of Jewish education for the National Council of Palestine Jews at Jerusalem.

DR. ROBERT A. MILLIKAN, of the California Institute of Technology, has been appointed chairman of the Board of Trustees of the Huntington Library and Art Gallery at Marino, Calif. He succeeds the late Henry M. Robinson, a banker of Los Angeles. An advisory committee has been formed to assist in administering the affairs of the library. Besides Dr. Millikan, the present trustees of the library and gallery are: Herbert Hoover, Archer M. Huntington, Dr. George Ellery Hale and Dr. William B. Munro.

DR. FRANK BALDWIN JEWETT, president of the American Telephone and Telegraph Company, was reelected president of the New York Museum of Science and Industry at the annual meeting of the Board of Trustees on January 11. Nelson A. Rockefeller was elected a vice-president, and Edward R. Stettinius, Jr., was reelected. Charles Pratt was reelected treasurer and secretary and Charles T. Gwynne, assistant treasurer. Robert P. Shaw, who has been acting director, was made director. Dr. Simon Flexner and Frederick S. Gordon were elected trustees.

DR. GERALD WENDT, director of the American Institute of the City of New York, has been appointed by Grover A. Whalen, president of the New York World's Fair Corporation, to draw up a plan for coordinating scientific displays. Mr. Whalen is reported to have said: "We do not intend to tell one chapter of the story of science in one single building. Rather we intend to disclose the whole story of modern scientific research, as far as is practicable, by adding a working, scientific display in connection with every major exhibit."

PROFESSOR EDWIN BERRY BURGUM, of New York University, has been elected first president of the New York College Teachers Union. It numbers among its members more than 750 teachers of the colleges in the metropolitan area. The new organization has been chartered as Local 537 of the American Federation of Teachers, an affiliate of the American Federation of Labor. Officers of the union include the following vice-presidents: Dr. Charles Obermeyer, of Columbia University, for the private colleges; Miss Charlotte Robinson, for the non-instructional staffs, and Professor Howard Selsam, of Brooklyn College, for the city colleges. Arnold Shukotoff, of City College, is secretary, and Professor Louis Weisner, of Hunter College, treasurer. Dr. Bella V. Dodd, also of Hunter, is legislative representative.

JOHN SARGENT (Education) and Dr. R. H. Thouless (Psychology) have been appointed sectional presidents of the British Association for the Advancement of Science for the annual meeting, which will be held, under the presidency of Lord Rayleigh, from August 17 to 24 at the University of Cambridge.

DR. EDWIN W. KEMMERER, professor of economics at Princeton University, was reelected, at the Atlantic City meeting, president of the Economists' National Committee on Monetary Policy. Other officers elected were: Dr. Harry D. Gideonse, of the University of Chicago; *executive vice-president;* Dr. Neil Carothers, of Lehigh University, and Dr. James Washington Bell, of Northwestern University, *vice-presidents.* Dr. Walter E. Spahr, of New York University, was reelected secretary.

OFFICERS reelected at the close of the meeting of the Phi Kappa Phi honor society were: Homer L. Shantz, of the Federal Forest Service, *president;* Lawrence R. Guild, Carnegie Institute of Technology, *secretary;* E. C. Auchter, Washington, *regent;* Roy M. Peterson, University of Maine, *editor,* and R. C. Gibbs, Cornell University, *fellowship supervisor.*

DR. JAMES ROWLAND ANGELL, formerly president of Yale University, and Admiral Richard E. Byrd, explorer, will assist a committee of leading Americans to select an "outstanding leader" in child education for 1937. The award offered by *Child Life,* an antique bronze statuette of a child, suitably engraved, will be presented to the winner on May Day.

GEORGE N. JEPPSON, Worcester, Mass.; Francis Henry Taylor, director of the Worcester Art Museum, and Russell A. Plimpton, head of the Minneapolis Institute of Arts, who were members of the art exhibition committee of the Swedish American Tercentenary Association, have been invested by King Gustav V of Sweden with the rank of commander in the Royal Order of Vasa.

DR. JACOB GOULD SCHURMAN, formerly president of Cornell University and later ambassador to Germany; Charles S. Meek, authority on municipal affairs, and James E. Gleason, since 1899 a member of the board of directors of the Rochester Athenaeum and Mechanics Institute, were cited for their many contributions to the educational, civic and industrial betterment of the Genesee Valley at the annual meeting of the Society of the Genesee, held at the Waldorf-Astoria on January 17. Dr. Schurman and Thomas J. Watson, president of the International Chamber of Commerce, spoke at the dinner. At a luncheon on Sunday, January 16, an illuminated scroll was presented to Mr. Gleason in appreciation of his services to the institute.

A FAREWELL appreciation dinner has been given to Dr. E. W. Bohannon, who retired from the presidency of the Duluth State Teachers College on January 1. He had served as president ever since the foundation of the college.

AN informal dinner as a testimonial to Dr. Morris Raphael Cohen, professor of philosophy at City College, who will retire at the end of this semester to join the department of philosophy at the University of Chicago, was given by members of the department of philosophy of the college on January 15.

DR. CARL BRIDENBAUGH, professor of history at the Massachusetts Institute of Technology, received the Justin Winsor prize awarded by the American Historical Association for the best book by a young scholar on the history of the Americas. This was presented at the annual dinner of the association at the Bellevue-Stratford Hotel, Boston, on December 31.

THE Clara Louise Myers Browsing Room at the library of the Flora Stone Mather College, Western Reserve University, was dedicated on December 1 to Clara L. Myers, who retired as professor of history six years ago after twenty-nine years of service. She now lives in New Philadelphia, Ohio.

As part of the ceremonies marking the signing of the Constitution at the University of New Hampshire, Dr. Roscoe Pound, dean emeritus of the Harvard Law School, spoke on January 13 on "The Constitution as a Legal Document." Following the address he gave a public lecture in the auditorium entitled "Liberalism and Realism."

DR. GEORGE L. KITTREDGE, who retired last September with the title emeritus as Gurney professor of English literature at Harvard University, will be the commencement speaker on June 20 at Smith College. His subject will be "Shakespeare and the Critics."

DR. WALTER M. KOTSCHNIG, professor of education at Mount Holyoke and Smith Colleges, will give a series of lectures on international problems at Grinnell College, Iowa. He will be at the college from February 15 to March 15.

DR. LEO J. BRUECKNER, professor of education at the University of Minnesota and a staff member of the Regents Inquiry into Education in New York State, made an address before the New York Principals Association at its dinner-meeting on January 15 at the Hotel Commodore. Assistant State Commissioner of Education J. Cayce Morrison, in charge of elementary schools, also spoke. A report on the work of the committee on curriculum revision was presented by John F. Conroy, chairman.

MISS DEBORAH KALLEN, founder of the School of Parents Association, Jerusalem, has arrived in this country to lecture on the school's development and to raise funds for a secondary school.

A BRONZE plaque with a tribute in Braille to the late Dr. Victor G. Bloede of Baltimore was unveiled on January 11 at a memorial service in the library for the blind of the Brooklyn Bureau of Charities. Dr. Bloede was for many years chairman of the committee for the blind of the bureau and a director of the agency.

MRS. MARY CARROLL CRAIG BRADFORD, for 1917–18 president of the National Education Association, died on January 15. Mrs. Bradford was superintendent of schools in Adams County, Colorado, from 1902 to 1905. From 1909 until 1912 she was county superintendent of schools with jurisdiction over the county and city schools of Denver. In 1913 she became superintendent of public instruction in Colorado, an office which she held for six years. Since that time she has been active in educational and civic affairs.

DR. ROBERT B. HARSHE, since 1921 director of the Art Institute of Chicago, died on January 11 at the age of fifty-eight years. He had previously been director of the Oakland, Calif., Public Museum and assistant director of fine arts at the Carnegie Institute; in 1920 he was made assistant director of the art institute in Chicago and the following year was appointed director.

DR. GEORGE GOW, professor emeritus of music at Vassar College and head of the department for thirty-seven years, died on January 12 at the age of seventy-seven years.

DR. EMILIE J. HUTCHINSON, head of the department of economics at Barnard College, died on January 13 at the age of sixty years.

THE death is announced of Chauncey Wayland Smith, state superintendent of public schools for Nevada.

THE twenty-sixth annual Conference of Educational Associations was held in University College, London, from January 3 to 10, under the presidency of the Right Hon. Sir Kingsley Wood, M.P. On January 4, Sir Kingsley Wood delivered his presidential address entitled "Education and Health." A joint conference on "Health in the Schools" was held on January 6.

THE University of Illinois has been presented with a collection of oil paintings, valued at $150,000, by Mr. and Mrs. Merle J. Trees, of Chicago. Mr. Trees was formerly president of the board of trustees of the university.

PLANS have been made for the immediate erection of two buildings for the arts and sciences at the University of Southern California. This has been made possible through a gift from Mrs. Walter Harrison Fisher, art patron and civic leader of Beverly Hills. The new building for fine arts will be the first of a series of such structures to be erected. It will house the private collection belonging to Mrs. Fisher, gathered from the galleries of Europe. Other rooms will provide for current public exhibits.

A GIFT of a completely equipped building for scientific research in zoology, botany and related fields has been made by Captain Allan Hancock to the University of Southern California. It will be known as the Allan Hancock Foundation for Scientific Research. The new building will include laboratories for investigators and students in the study of the many thousands of specimens collected on the six Allan Hancock Pacific expeditions; dissemination of the results of research activities through publications, motion pictures and lectures. Other specimens are now housed in the Smithsonian Institution, the Field Museum of Natural History and the American Museum of Natural History. A special feature of the new building is a large vault of steel and concrete extending from the basement to the top floor. Additional plans call for a museum room for art treasures from the Hancock home. An assembly room for musicales and motion picture projection, a library on marine life, laboratories and a chart room showing the six cruises of the *Velero III* since 1931 to southern Equatorial Pacific waters, will be included. The twelfth of a series of reports on various phases of the Hancock collection was issued recently.

THE enrolment at RCA Institutes for operators and radio engineers has reached 905, about two thirds of these being in the New York school and the remainder in Chicago. In addition twenty-five employees of the corporation are receiving free instruction in the schools. Most of the students are in the general course, which requires fifteen months for completion in the

day classes and three years if night instruction is taken. In March this day term will be extended to a year and a half. At this time, a two-year term in television will be added. It will be available only to those who have completed the general course.

A CABLE to *The New York Times* announces the formation of a National British Institute of Economic and Social Research for the investigation of the problems of contemporary human society. The institute has been made possible through grants from the Rockefeller Foundation, the Sir Halley Stewart Trust and the trustees of the estate of the late Lord Leverhulme. Sir Josiah Stamp has accepted the presidency. It is hoped to find means to remedy the inadequacy of the facilities for research in the social sciences compared with those for the natural sciences. Organization of the institute has been entrusted to Sir William Beveridge. He will be assisted by Professor N. F. Hall, chief of the department of political economy of the University of London. Professor Hall has been invited to become the first director. The institute will collaborate with similar organizations abroad and publish the results of its researches.

THE City of Buenos Aires has issued, according to *The Christian Science Monitor,* regulations forbidding the admission of children under five to any cinema or theatrical performance and allowing only those over twelve to be admitted at night functions. This rule has become fairly general in South America, but Argentina requires in addition that theater managers must obtain a special permit for the admittance of children under twelve, and unless the plays or films are classed as suitable no child may enter at any time of the day. Naturally, an exception is made in favor of circuses and other juvenile entertainments, provided these are held in daylight. Two committees have been set up under the Maternity and Infancy Bureau in Buenos Aires, and examination of the films will take place a week before they are scheduled for showing. For plays the period is fixed at three weeks. The permits will be issued by these committees—a guarantee considered more efficacious than the rule in other parts where the municipality or a political authority has the last word. The law also requires that theater and cinema bills and programs definitely indicate whether the features or subsidiary items are suitable for children in accordance with the decision and classification of the two committees.

THE German Ministry of Education on January 8 banned the teaching of Hebrew in Germany's gymnasia (junior colleges) where the subject had been optional. Henceforth the study of Hebrew will be confined to the universities.

ACCORDING to an Associated Press dispatch, sixteen Chinese colleges and universities at Peiping have failed to reopen since the Japanese army occupied the city last August. Some 2,000 professors and 12,000 students have fled. Five American colleges and universities, however, are still operating under the new Japanese-sponsored administration. In the Chinese schools that have reopened, three languages are studied—Japanese, Chinese and sometimes English. Chinese high-school teachers are forbidden to mention the League of Nations and, according to the new Japanese-edited text-books, Manchuria never belonged to China.

SHORTER ARTICLES AND DISCUSSION

COLLEGE GEOGRAPHY TEXT-BOOKS

IT is strange, in the pedagogical world, how we find ourselves being told to do so and so and to seek for certain ideals in use and make-up of texts for pupils of the secondary schools; and how these same advocates of the perfect text will write one which violates all that has been written, preached or hinted in classroom and lecture hall.

The writer has often attempted to rate college texts by the standards set for secondary school texts. Unfortunately, if one is truly conscientious in his ratings, he finds the college texts, written by the best of alphabeted authorities, sadly lacking in many respects.

In order not to hold any particular publisher or writer in the limelight of ridicule, there will be no mention made of actual names of writers,

books or publishers. However, the persons or companies at fault who read these constructive criticisms of one who has suffered long and silently from a policy of, "Do as I say, not as I do," will do well to reform their latest brain offerings.

(1) Why do the books of a certain technical text-book publisher always smell bad? While in college, way back in 1923 and in charge of the college book store, I wrote to this publisher requesting that "he" change the paper in his books. It made the students actually nauseated to read the texts, but due to the peculiarities of the profession I was then studying, there were practically no texts published in that field except by this particular publisher of the odoriferous volumes. The answer to my letter was that the coating of the paper gave the books their peculiar student-sickening quality and nothing could be done about it. The facts are, 1937, still nothing has been done about it by that publisher, for only recently I had to read one of that publisher's books, and the paper still had a rancid, sour-milk odor.

However, I, as a secondary school teacher, ordering books for use in my school, did something about an odorous book. Among sample copies submitted to me by various publishers last semester there was one excellent text, meeting my requirements to the letter, but I ordered 150 copies of another text because its cover and pages did not reek of some substance used in its manufacture. As a teacher I can make the children sick enough of a subject or field without the assistance of the text-book!

(2) We are told not to select texts whose pages, when light shines upon them, have glare, thus causing eyestrain. From the number of college texts which use this type of paper, particularly those illustrated, as are geography texts, I now understand why so many students are forced to wear glasses after a few years of study.

(3) Why must books weigh so much? This fault has even crept down into the high school. Our books are becoming larger and larger, weightier and weightier. Why? Are they sold by the pound? Is it a question of much paper for the money? Or is it because the writer has never heard of publishing a work in two small volumes, easily held, readily sought out by the student, and read without becoming tired or bored? We need smaller, lighter books, and the authors can assist in their making by knowing what should and could be omitted; then omitting the chaff.

(4) We are told to judge a text by its style. Does the author write vividly? Is his style "dynamic" (a recent fad-word in education)? Now let's be honest. Just how many books of geography, especially those pertaining to the continents, have we read recently which made us forget it was "supper time"? Not many, but there are a few. I hear some person say at this point, "Really scientific texts do not pretend to be as interesting as novels." No, not quite like novels, but they can do more than convince one that scholarliness means being boresome, for, as said, there are some texts which have been written by men who have a dynamic style even with a college subject.

We should not forget, either, that since geography is about the earth, how can one find himself justified in defending a writer who wrote about it so uninterestingly? This writer humbly suggests that the scholar who can not write without boring the reader should hire a "ghost writer" to "pep" up his creation, making sure of course that it still remains scientific. Then the student of geography will no longer be bored by the world!

(5) And speaking of style and the mechanics of writing, why must our scholars forget, when they write a text, all the rules they have ever read or studied about unity, coherence and emphasis? This article I warn you, now, may lack unity, coherence and emphasis, but please remember the writer does not write texts. He merely studies and reads them.

(6) Why must a text writer cram into a few short(?) sentences so many statements that he must use the semi-colon frequently, and make the job of outlining his books one of laborious drudgery? Why can't he take the time and space to number his important statements, listing them one under the other? Why can't the more important statements be underlined as part of the type in the larger paragraphs? The best little general science text I ever reviewed for mechanical construction had all the important

statements, which the pupil should remember, cleverly underlined. The writer of books for colleges should remember that college students, especially graduate students, have far less time in which to browse over books than our country club secondary school pupils. They would appreciate intelligent underlining done by the author. So would the professors who teach the courses, and who spend their dinner hours raving about how college students have never learned to study—the right thing.

(7) It is a merit of many texts to have repetition of materials presented, provided the repetition is presented in a new way. Too often the same terms, the same products, the same localities appear time and again in a text where a little intelligent organization of materials, commonly called "lumping," would eliminate much drudgery of reading; for one does read these same things again and again for fear there may be a new thought inserted between the old materials. One would think our writers were paid by the word or page as are the short story writers.

(8) On the other hand, many writers, while filling their texts with constant repetition of material once given, will assume that students have had preliminary courses which deal with terms, foreign phrases, principles, etc., which they do not attempt to explain to the ignorant student. The text-book writer must not take anything for granted when introducing new materials in his book. He must remember our college courses are so constructed in many schools that the student can elect as he pleases in many fields, and while guidance is preached as necessary for the high-school student, he somehow escapes such contaminating influences for his good when arriving within the portals of his (or his father's) chosen alma mater.

(9) Then, too, what has become of the little statements which at one time were placed along the sides of the pages of a text in order to guide a student in topics discussed under larger headings? The writer remembers using a "History of Education" which adopted this system of student helps in study, and owes a lasting debt of gratitude to its author. He also owes a like debt to the economics book—taboo to the professor teaching the course—which had a pithy concise summary of each chapter at the end. The book was worn out from use by other students because of its brevity and excellent summaries. We did read the required text, but, as one student expressed it when he had to study, he "was having a session with the morgue."

(10) Why does every author, with few exceptions, pride himself upon the illustrations which he has taken with a none-too-good camera and with little knowledge of its operation? Must authors use their own illustrations? I have seen better in a non-scientific travel magazine which told vivid stories, and the photography was beyond reproach. Why are illustrations placed in many instances so far from the material discussing them? Why is the explanatory material so often in small type, which angers the hurried reader who must strain his optical apparatus to gather the information?

(11) With illustrations we must consider maps. Many authors spend their entire preface thanking this person and that person for dot maps, line maps, etc., whereas the reader often spends his time "cussing" those persons because the maps and line illustrations are so poor and hard to fathom. The writer has recently begun coloring areas in maps in a text he is studying, because it is only by so doing that he can gain any idea of their significance. He would suggest that authors of texts also place complete maps of countries and regions in their texts of the type found in the best encyclopedias, as each country or region is studied, so that required locations may be mastered more easily or, better, *actually located.*

(12) Many texts also have a map of a continent or the key map of the text pasted in the rear. Being much larger than the book it is soon destroyed in the folding and juggling of the book with map attached. Why not place all "key" maps in rear of book in a pocket, as do the guide book publishers for tourists? This will prevent damage and loss of map.

(13) Why do authors place too much on a map, and sometimes forget to tell the student what certain things mean? Remember we are using the book to learn. If we knew it all we would not need the book.

(14) Why have not the publishers, after securing a text written by an authority, had experts in method of presentation of materials reorganize the material so that the most profit

may be gleaned from the text by students? Our secondary texts writers are masters in presentation of material, even though often criticized for inaccuracy. Perhaps an expert in methods and an expert in subject-matter is needed for giving birth to college as well as high-school texts?

(15) Why clutter up pages with statistics which are bound to change in the next few years? Of course statistics are valuable, but would it not be better to place them in the back of the book? Or could some sympathetic authority devise a method of presentation in the body of the book so that it would be thrilling to consider them?

(16) In a recent text I have reviewed I found (and it is not alone in this respect) that the author mentioned plants and animals foreign to the writer, yet he prides himself in having studied botany and zoology, etc., in some detail in undergraduate days. What about the geography student who has not delved into the biological fields? There are no pictures in the text to give one an idea of the plants or animals. There are no pictures of these organisms in the best encyclopedias or other texts. To the student they merely become words, words and more words. When a text-book writer includes an animal or plant which he knows is not in zoo, laboratory or book, he should make sure to have an illustration of that plant or animal if it is worth mentioning in the text.

(17) I have often wondered why the college text-book writer has never taken the trouble to write companion books for his texts, which companion books would tell the student studying his book how he might best use the material, if a teacher, in the high school. These authorities and master teachers must have some little secrets of method and technique from which the rest of us might profit. I believe I am not wrong in stating that most of the geography studied by students in American colleges is studied with the view of passing it on to pre-adolescents and post-adolescents, in easily assimilated form.

(18) Again, why haven't the text-book writers for the colleges listed at the ends of their book visual materials which might be used by the professors teaching the course? These should include especially motion pictures which are reasonably scientific and which will make regions and countries live in our minds. We must not forget that all teachers and students will not see foreign shores, nor do we in our theaters to-day see as many short subjects, etc., which were once the heritage of the high-school and college youngster interested in geography. The films shown to-day are too often, if shown at all, of the oddity nature.

(19) One of the last questions I have to ask is: Are texts written according to a formula for the number of pages in each chapter? There are too many texts with chapters of 20 pages. Why not try a few with only five or ten, or even thirty pages? These twenty-page chapter texts often show stretching of material by the author.

(20) It is generally assumed that publishers of text-books do get the best men in the field who are available for writing texts. Therefore, why clutter up the bottom of pages with "opposite citations," this footnote and that footnote? Why can't these either be included in the paragraphs, as the facts are mentioned, or placed at the end of the book for those who intend to read all the references? Reading a scientific geography text is actually an exercise in eyestrain if one conscientiously reads all the footnotes. In due respect to the authors the college student should be willing to accept his statements without proof by another authority. Perhaps both authorities lied or were in error. That would be discovered in any event only by reading all the authorities, so of what value are footnotes when so few read the publications to which they refer?

(21) Last, but not least; Why do most texts find themselves garbed in forbidding covers? Are the authorities afraid that "Johnny, the student's young hopeful," might some day find the book on his father's bookshelf and be tempted to read it? Why not gayer covers for texts? They would cheer up the student's room, and perhaps the student, who often turns to the book in a spirit of gloom.

As stated in the beginning, the writer never wrote a text, but has used many. To those writers who became human personalities to the writer he offers a hand in thanks. He feels he has gotten part of that authority's spirit and enthusiasm for the subject when studying even with another professor. To those writers who gave him drudgery as a reward for having bought their texts, he will remind them, perhaps, that is the reason why students, pressed for

cash, each semester, journey to the second-hand book store with *their* texts first. Perhaps those writers will not read these pages.

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FACTS CONCERNING HYGIENIC ILLUMINATION INTENSITIES

THE illumination under which the eye works is an important determinant of comfortable, healthful and efficient visual function. Contemporary trends toward doing more work under artificial light means, therefore, that hygienic illumination is to a large degree a matter of hygienic artificial lighting. It is well known that faulty illumination produces eyestrain and that this frequently leads to reflex organic disturbances and sometimes to defective vision.

Recently the articles in popular magazines reporting interviews with "lighting experts," certain reports in scientific journals, pamphlets on lighting, news items and extensive advertising on illumination have combined to arouse a lighting consciousness. In all these sources of information the main issue has been the brightness or intensity of light that is considered necessary for efficient and comfortable reading. This paper will be concerned with a critical evaluation of the results obtained and interpretations made in investigations concerning illumination intensities considered adequate for reading.

Whether the information is derived from popular articles,[1] from opinions of educators[2] or from more direct sources, emphasis is placed upon the need of relatively high intensities to assure hygienic lighting. These recommendations can, for the most part, be traced back to "The New Science of Lighting" and other writings of Luckiesh and Moss.[5] In general, there has been a tendency for educators, magazine writers and the public to accept the recommendations uncritically, assuming perhaps that they were established beyond question. Since a clear understanding and a proper control of lighting intensities has a vital bearing upon the hygiene of reading, it is desirable to examine the bases for the high intensities specified.

Luckiesh and Moss[3] recommend the following intensities with the caution that they are quite conservative: 100 foot-candles[4] or more for prolonged tasks and for fine inspection, 50 to 100 foot-candles for difficult reading, 20 to 50 foot-candles for ordinary reading, 10 to 20 foot-candles for reading that is not prolonged, 5 to 10 foot-candles for interrupted and casual seeing, and 0 to 5 foot-candles is the danger zone. These specifications are based upon two sets of data which we shall examine in turn: (1) In the first,[5] which the authors claim is mainly responsible for establishing a "new science of lighting," nervous tension in the fingers was measured while subjects read under 1, 10 and 100 foot-candles of light. Because the authors found some decrease in finger pressure from 1 to 10 and some more from 10 to 100 foot-candles, they state that "at least several hundred foot-candles would be the best intensity of illumination for this task which could be performed in full moonlight." The task was reading 12 point (large) type on good paper. Tinker[6] points out that the authors, in graphing their results on a logarithmic scale, have been led to a misinterpretation. Replotted on a linear scale the results indicate a rapid decrease in muscular tension up to about 5 foot-candles, slower decreases up to 10 or 12 foot-candles and only slight decreases thereafter. Such a curve is exactly like those for the relation between visual acuity and intensity of illumination. The data really show, therefore, that most of the changes (probably all that are of practical significance) occur at relative low intensities. There is no justification in these data, any more than there is in data on visual acuity, for concluding that exceedingly high intensities are either desirable or necessary for reading ordinary print. The whole sequel of popular articles and recommendations based upon the report, therefore, are unvalid.

[1] M. D. Gillis, *McCalls*, November, 1934, 46–47; M. Luckiesh, *Good Housekeeping*, November, 1934, 88–89; 201–202; and others.

[2] H. G. Rowell, *The National Parent-Teacher Magazine*, October, 1935, 10–11; 34–35; and others.

[3] M. Luckiesh and F. K. Moss, "The New Science of Lighting," p. 36. Lighting Research Laboratory, General Electric Company, Cleveland, 1934; and "The Science of Seeing," p. 548, New York, D. Van Nostrand Company, 1937.

[4] A foot-candle is the brightness of light from a standard candle one foot away.

[5] M. Luckiesh and F. K. Moss, *Jour. Exper. Psychol.*, 16: 540–555, 1933.

[6] M. A. Tinker, *Amer. Jour. Optom.*, 12: 43–51, 1935.

(2) Luckiesh and Moss have been equally at fault in concluding that the intensity of light preferred by readers indicates that high intensities should be employed for satisfactory seeing. When all available evidence is considered,[6] it is obviously indicated that the adaptation of the eye at the time largely determines what intensity of light will be preferred by the reader. Instead of preferring approximately 100 foot-candles, as suggested by Luckiesh and Moss,[3] 5 to 10 foot-candles are chosen when the eye is adapted to the illuminations ordinarily found in homes and offices (8 to 30 foot-candles). None of this evidence, therefore, indicates that ease and comfort in reading is increased by exceedingly high intensities of light.

What intensities are adequate for reading? Pertinent experimental evidence follows (cited in 7): (1) Tinker has shown that visual fatigue (ability to sustain clear seeing) increases when less than 3 foot-candles of well-diffused light is used for reading. There was no variation in fatigue from 3 to 53 foot-candles. Similarly, speed of reading decreased with less than 3 foot-candles but showed no changes from 3 to 53 foot-candles. (2) When the intensity of diffused illumination was increased by steps from 9.6 to 118 foot-candles there was no change in working efficiency in solving easy arithmetic problems. (3) Efficiency in letter sorting in U. S. postoffices reached its maximum when the light measured 8 to 10 foot-candles. The improvement was only slight from 5 up to 8 or 10 foot-candles.

Since so many factors (distribution of light, condition of eye, etc.) are involved in determining hygienic illumination, it is hazardous to set up standards of light intensity for reading. It is possible, however, to suggest tentative specifications that provide a margin of safety for efficient and comfortable seeing: Never read in light of less than 5 foot-candles unless there happens to be a very bad arrangement of direct lighting. In such a situation a slight reduction in the brightness will be less fatiguing to the eye; with the fair distribution of light that is found in many homes use 5 to 10 foot-candles; with good distribution of light, use 10 to 15 foot-candles. If no glare is present, higher intensities may be employed with safety but without any practical advantage. A recent international commission on illumination recommended 8 foot-candles as a minimum in classrooms.

In certain situations higher intensities are essential for hygienic vision. Both the defective eye (refractive error) and the eye changing with age (presbyopia) are benefited by relatively bright illumination. When reading poorly legible print or when discriminating very fine details, light intensities should be increased somewhat.

It appears, therefore, that there is nothing in the literature to indicate that the person with normal vision needs excessively bright light for comfortable and efficient vision. Whenever such high intensities are recommended the consumer should be sceptical until satisfactory facts are adduced to support the recommendation.

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[7] M. A. Tinker, *Amer. Jour. Ophthal.*, 18: 1036–1039, 1935.

SPECIAL CORRESPONDENCE

A MODERN SCHOOL

ONE of the most significant building projects undertaken by the Public Works Administration so far was recently completed at Ansonia, Conn. This high school is the first completely modern school to be built in the East, and was designed by William Lescaze, architect, and Vernon F. Sears, associate.

The story of how this high school came to be is a new American saga. The building committee, composed of tradesmen, manufacturers and a few professional men, listened to the architects' arguments for a better life for American youth, and saw great fundamental sense in them. They spoke of light, the influence of a building on the customs, habits and ways of life of the child, and quoted prominent educators' observations of the pervasive influence of architecture on human beings. They were told to submit their design. The result of these conversations is the building which has just been completed.

The architects attempted to embody all the principles of the modern school of architecture in this building at Ansonia. Only modern archi-

tecture gives the architect freedom to express ideas that make his art a living one and worthy of its name. Modern architecture has often been called functional architecture, as it is essentially a creating from within, a creating of the facilities for activities and even often the very activities themselves. So the building grows outward, and externally becomes an expression of its content. If the architects had proceeded along traditional lines, choosing a classical façade, trying to fit the space within it, no modern architecture would have resulted.

The façade would not have been beautiful because not true, and the disposition of the space within it would have been a makeshift with all the confusion of restriction. It is their belief that the approach of the modern architect is not only most sensible and rational, but it is the only approach wherein architecture, as one of the creative arts of life and culture, fulfils its function.

In this recently completed Ansonia High School building, with a free working capacity of 900 pupils, an attempt was made to embody these concepts. In Ansonia the problem, conditions and needs that were to be dealt with were carefully formulated. The architects' first thought was the program—they studied the exact nature of requirements, not only of the Board of Education, but also of the superintendent of schools and of the principal of schools, making a careful analysis of them. Next, they studied the site: they took into consideration all fixed conditions, the topography of the land, the orientation of the building, locations of streets and amount of traffic, what the adjoining buildings were, and what the playing facilities might be, all in relation to the directions of light, sun and wind.

Their next consideration was floor plans: they studied the arrangement of activities and administration in relation to each other, tying them in with the program and site. Next, they chose materials, bearing in mind the permanence, low upkeep and durability, as well as esthetic grounds. The façade, which came next, was designed as an honest, undisguised expression of the inside. External form followed floor plan, windows being placed where needed, as well as all other external aspects. Their next and final consideration was finance, fitting all other things into the budget and considering economy over the expected life of the building, and its use—and considering also economy of operation.

An ordinary school would have overlooked the fact that this is a corner lot and would have planned it in accordance to accepted tradition; that is, with the main entrance in the center of the main avenue, without any easy access to the auditorium, making it almost impossible to use the school after hours unless the whole building were opened. Instead of the open porch serving as an entrance from the sports field to the gymnasium, this traditional planning would have made it necessary to locate the gymnasium so that the entire school would have had to be trespassed before reaching it. The wings, of course, would have been planned symmetrically with two wings exactly alike on both sides, irrespective of their relation to inside activity. A school planned in the traditional manner seldom takes into consideration the amount of sunlight which can enter the classrooms, as sizes of windows are limited by types of traditional architecture.

The above has been described in detail because it is the architects' belief that every building problem contains within itself its own answer, once the problem is accurately defined. Note how they have departed from much of our current school architecture. Here they have built from within, and the appearance of the building became that which it is, a noticeably honest expression of itself. The traditional school, on the other hand, chooses one of the accepted classical façades and fits into it the interior arrangement.

Even the layman is aware that traditional concepts of education are everywhere being discarded. For it is a different world to-day that children are being born into, and it is for our world of to-day that they must be educated. Traditional school buildings are likewise inadequate. Buildings are needed that are built from the concept of modern education so that they will have the facilities for it.

Architecture, to the uninitiated, might seem like an art that is apart and independent of all social movements. Yet actually every building that is worthy of its name is the embodiment of a social concept. Some one once said that architecture is ideas expressed in stone. The building that the architects offer as a modern school not

only provides the facilities for the activities that constitute modern education, but should itself be an expression of these concepts or ideas translated into architecture. In fulfilling its purpose thoughtfully and truly, it becomes at once, with its purpose and the very instrument of education, facilitative, impressive and eloquent.

CORRESPONDENT

QUOTATIONS

EDUCATION IN GREAT BRITAIN IN 1937

HISTORY became alive to the children of the Empire when on May 12 they were able to follow the great ceremony of the Coronation of the King and Queen. London children were fortunate in being able to see the procession as well as to listen to the service, for some 37,000 of them lined the Thames Embankment and acclaimed the King and Queen as they passed. Many boys and girls also gathered at the Albert Hall on May 18 for the Empire Rally of Youth, where they listened to an inspiring message from the King given by the Duke of Gloucester, calling for a "partnership of peoples" based on fellowship. The farewell address of Mr. Baldwin as Prime Minister followed. These memories, which must be abiding, were strengthened the next day by the Archbishop of Canterbury at the impressive Service of Youth held at Westminster Abbey, when in his sermon on "The Challenge of the Coronation," he charged the youth of the Empire to dedicate themselves to liberty, justice and freedom.

The King's ideal of partnership—"doing things together for the common good"—has found an echo throughout the year in conferences held between local authorities and voluntary school managers engaged in working out proposals to take in the new age group on September 1, 1939. The same good feeling was found earlier in the arrangements by which the Burnham Committee reached agreement on the question of new conditions governing the upgrading or down-grading of head teachers. The Blackpool difficulty also has disappeared, and meetings between various interests have smoothed future paths in relation to the employment of teachers in voluntary schools.

Local authorities have been going ahead with plans for new schools. The education estimates showed that the Board of Education were prepared to meet additional expenditure, the estimates showing an increase of £1,296,233 over 1936, of which £895,000 was provided for outlay by local education authorities on approved schemes of reorganization and development. The grant for conveyance of children was raised from 20 to 40 per cent. of the cost. The Board of Education has been active in issuing useful pamphlets and memoranda, but so far not much progress has been made in getting rid of schools on the Black List. A heavy task awaits Lord Stanhope, who succeeded Oliver Stanley last summer, as president, and Kenneth Lindsay, who became Parliamentary secretary. Both have given proof already that they desire to get things done.

The desire of the Government to improve the physique of the nation and to provide better opportunities for boys and girls to enjoy healthy recreation was seen in the campaign for national fitness foreshadowed early in the year by Sir Kingsley Wood. His plans took shape in a White Paper (Cd. 5364) issued on February 6, in which it was stated that two national advisory councils would be set up, one for England and Wales and one for Scotland—to survey the field and advise on the best methods of meeting needs and to suggest the general lines of advance. Two grants committees were to be appointed, local committees were to be organized and a National College of Physical Education was to be established. The Physical Education and Training Bill, which was introduced in the House of Commons by Mr. Stanley on March 16, defined more clearly the work of the National Councils and Grants Committees, gave powers to the Board of Education and to the Secretary of State for Scotland to make grants to voluntary bodies and local authorities in accordance with recommendations of the Grants Committees towards the capital cost of providing facilities for physical training and recreation. In addition to such objects as gymnasiums, playing fields, swimming baths and camps, help for buildings not necessarily confined to physical

training could be given to clubs or to community centers.

The bill extended powers already existing under Section 80 of the Housing Act, 1936, and widened those of Section 86 of the Education Act, 1921. By this amendment the supply of facilities for social and physical training will be limited no longer to persons under 18 or to persons over 18 attending education institutions. The new powers can be used for the well-being of persons of any age. The Bill became law on July 13 and was followed on August 9 by a memorandum setting forth the powers of local authorities, and drawing special attention to the establishment of community centers. Other memoranda followed. One statement provided information touching the procedure for making grants from the £2,000,000 earmarked by the government for distribution up to March 31, 1940, and the other made clear the opportunities afforded by the amendment of Section 86 of the Education Act 1921.

It has been recognized both inside and outside Parliament that schemes to promote physical fitness can not do much unless steps are taken to reduce the hours of work of boys and girls between 14 and 18 years of age. The Factories Bill, introduced early in the year, occupied 19 days and 27 sessions of parliamentary time. The bill emerged from committee improved by amendments, although it did not meet the wishes of those members specially interested in education who desired to limit the working week of young boys and girls to 40 hours. The normal working week for women and young persons under the new act will be 48 hours, but boys and girls between 14 and 16 will not be employed as a rule for more than 44 hours, though there are certain exceptions which may be allowed after representations have been made to the Home Secretary. The younger age groups must leave off work not later than 6 in the evening, which should give some chance of attendance at continuation classes. The whole question of the hours of labor of school-leavers is bound up closely with the exemption sections of the Education Act, 1936. These provisions are still giving concern to local education authorities.

The Board of Education issued early in August a circular (No. 1,457) recording the procedure to be adopted. It urged, among other suggestions, the importance of making surveys of the conditions under which children aged 14 to 15 are being employed at present, and local education authorities were reminded that valuable information could be placed at their disposal by the Juvenile Advisory Committees of the Ministry of Labor. It is clear, however, that there exists at present a great deal of unsuitable blind-alley employment. This was made clear in the report of the departmental committee on the employment of young persons in unregulated occupations, which was published in March. The committee spoke of the "unduly long hours" worked by young people, and stated that under existing conditions it was felt that there was no opportunity "of such further training of mind and body as is requisite to produce healthy, vigorous men and women and useful members of the community." "Pending a comprehensive scheme" of reducing hours of work to something "substantially lower" than 48 hours, the committee recommended this figure as the limit for employment with the prohibition of employment at night between 10 P.M. and 6 A.M. and no overtime for boys and girls under 16. The bringing in of boys and girls between 14 and 16 into the scheme of National Health Insurance which occurred towards the end of the year is likely to throw some light on these questions.—*The Educational Supplement of the London Times.*

REPORTS

TEACHERS COLLEGE OF COLUMBIA UNIVERSITY[1]

1887–1937

THE work of what is now Teachers College was begun during the winter of 1886–87. Its first half-century has now been completed. While this statement is true in fact, it differs from the formal legal record for the reason that the first provisional charter granted by the Regents of the University of the State of New York to the New York College for the Training of Teachers bore the date of January 12, 1889. The difference of two years between the actual and the formal beginning of the work of what is

[1] From the annual report of Dr. Nicholas Murray Butler, president of Columbia University.

now Teachers College is due to the fact that before a charter could be granted, an endowment fund of $100,000 had to be provided. It required two years to secure the gifts necessary to accomplish this end.

The real origin of Teachers College and its inspiration are to be found in the Reports of President Barnard made to the Trustees of Columbia College for the years 1881 and 1882.[1] The discussions in those Reports of education as a science, of the need for the careful and scientific study of education as well as for thoroughly trained, well-informed and well-disciplined teachers, have long since become classic; but President Barnard was then blazing a new path. He proposed to establish in Columbia College a Department of the History, Theory and Practice of Education. He outlined in detail the scope and the work of such a department. He sketched an ideal school of elementary training and brought the whole power of his scholarship and his years of reflective study to bear upon the presentation and interpretation of the subject that was so dear to his heart. At the time, these recommendations of President Barnard were heard without enthusiasm and with considerable skepticism by the Trustees and the Faculty of Columbia College.

It so happened, however, almost by accident, that one who had been profoundly impressed by President Barnard's arguments was invited in the autumn of 1886 to become president of the Industrial Education Association in New York City. That association had had a short but significant history. It was the outgrowth in 1884 of an earlier and most interesting group known as the Kitchen Garden Association, incorporated in April, 1880, by eleven young women who had determined to promote the study of the domestic industrial arts, particularly among the working classes, and to give to their children and to such others as might be found practicable, free instruction in the household arts. This group was guided by a very remarkable woman, Miss Emily Huntington, who devised the system of organization and instruction which was followed. So successful was this undertaking and so wide the recognition of its usefulness, that in 1884 it was made the basis of a new organization of wider scope known as the Industrial Education Association into which it was then absorbed.

The purpose of this new association was to promote special training in any of the industries which affect the house and the home, and which would enable those receiving it to become self-supporting; to prepare and to publish literature on this subject; to study methods by which domestic and industrial training might be introduced into existing schools; and to train teachers who would be able and ready to take up this work. The women who were interested in this movement were true philanthropists, eager for a practical and highly useful type of public service. Their work advanced by leaps and bounds. A house at 54 East 11th Street was rented as its headquarters and, with a view to rousing public opinion generally, public meetings were held and exhibitions of pupils' work were given. President Gilman of Johns Hopkins University was greatly interested in the Association and aided it with his counsel. General Alexander S. Webb, then president of the City College, was the first president of the Industrial Education Association, which had added to its membership and board of control a number of men of high standing and great usefulness in the community.

It was in the winter of 1886–87 that General Webb retired from the presidency, and one who had been inspired by the arguments of President Barnard's Reports was invited to become his successor. This invitation was accepted upon condition that the work of the Industrial Education Association should be so changed and broadened as to make it really representative of President Barnard's ideals, the whole movement itself to be converted from a philanthropic enterprise into one for educational advancement and reform. A College for the Training of Teachers was organized and its work started. The excellent building, No. 9 University Place, which had just been vacated by the Union Theological Seminary, was rented to be the home of the new college. This building was known affectionately for more than a decade by teachers and students alike as "Number Nine." In the program of study of the college, manual and industrial training were emphasized. A model school named

[1] *Cf.* "The Rise of a University," Vol. I; edited by William F. Russell, Dean of Teachers College (New York: Columbia University Press, 1937), pp. 289–329.

for Horace Mann was opened and special classes for teachers were organized, some of which were held at late afternoon and evening hours and during the summer school vacation. So it was that by the grafting, so to speak, of President Barnard's educational ideals upon a philanthropic enterprise of outstanding importance, the New York College for the Training of Teachers came into existence, secured the funds necessary for its support and growth and was able to procure the provisional charter of 1889. This was followed by the permanent charter of 1892, when the name of Teachers College was given to the institution.

When the trustees of Columbia University purchased the present site on Morningside Heights, ground immediately adjoining was purchased for the New York College for the Training of Teachers in order that what was soon to be known as Teachers College might get the largest possible benefit from association with the work of the university.

On January 27, 1892, the trustees of Teachers College proposed that their corporation be merged with that of Columbia University from and after July 1, 1897, when the university was to move to its new site. This proposal, however, was made too soon to be favorably acted upon without damage to the new institution. University opinion was by no means yet convinced of the value or importance of the undertaking, and it was quite plain to the friends of Teachers College within the university organization that to incorporate it in the university at that time might well be to check its growth and to limit its importance. Therefore, on the advice of those who were most concerned for the future of Teachers College, the trustees of the university rejected this proposal. Subsequently, when university opinion had sufficiently changed, the agreement of March, 1898, was adopted, by the terms of which Teachers College was incorporated in the educational system of Columbia University as a financially independent and self-governing unit, in accordance with the federal principle upon which the university's educational system has since been steadily developed.

The fiftieth anniversary of the establishment of Teachers College by charter will be appropriately celebrated in 1939. It is becoming that in 1937 record should be made of the very interesting and important happenings of the years before the provisional charter was granted by the Regents.

EDUCATIONAL RESEARCH AND STATISTICS

COMPARATIVE RECORDS OF DEPARTMENTAL MAJORS

THE theory that the study of certain subjects tends to make better students seems to have been definitely abandoned. However, the question "Do the better students tend to select certain fields of study?" has received less consideration.

In an attempt to partially answer this question, a study was made of the scholastic records of 1,331 seniors graduating from the University of Wichita during the ten year period 1927–1936.

Students were grouped according to the subject in which the major work was taken. For each student the average mark for all work taken in college was computed, and the average of such averages computed for each group. (The University of Wichita marking system is on a percentage basis, 70 being the minimum passing mark.) In this manner it is possible to compare the work in all college subjects, the comparison is not merely between marks in the major field, which might be influenced by special factors.

In order to determine whether apparent differences are really significant, and not due to chance, the standard deviations were computed for the various groups. Whenever the difference between the average for all students and that for any particular major subject group is statistically significant (difference divided by standard deviation of difference is three or more) that average is printed in italics in Table 1. Some apparent differences turn out to be not significant, probably due to the large variation in individual averages or to the small number of cases involved.

In like manner, Table 1 gives the results obtained by computing the average number of hours elected in the major subject; differences from the general average which are statistically significant are indicated in italics. The large number of hours in the major subject required

TABLE 1
COMPARATIVE RECORDS OF DEPARTMENTAL MAJORS

Major subject	No. of cases	Average of scholastic averages	Average no. hours in major subject
French	28	*89.02*	34.54
Foreign language	7	*88.83*	31.33
Spanish	18	*88.53*	32.31
Botany	18	88.29	33.19
Mathematics	15	87.67	31.83
Music	81	*87.41*	*49.22*
Education	116	*87.27*	33.69
Education-psychology	24	87.11	37.29
Public school music	11	87.05	54.86
Physics	6	86.96	30.20
History	118	*86.70*	32.49
Speech	6	86.50	34.50
Art	28	86.46	*56.78*
English	194	86.15	33.51
Aeronautical engineering	14	85.71	not computed
Psychology	7	85.24	31.86
Chemistry	65	85.23	40.27
Political science	25	85.10	31.96
Journalism	28	84.56	32.09
Sociology	53	84.54	31.40
Home economics	47	84.30	34.23
Religious education and philosophy	10	84.18	33.78
Zoology	72	84.12	35.82
Commerce	5	83.96	37.40
Geology	20	83.96	34.25
Business administration and economics	194	*83.91*	*47.95*
Psychology-philosopy	7	83.85	34.14
Mathematics-physics	10	83.78	40.31
Economics	49	*83.33*	35.17
Business administration	17	83.18	38.93
Physical education	31	*83.09*	33.85
Biology	7	82.87	32.67
All courses	1,331	85.60	37.82

in certain professional courses makes the variation large. In some cases a student offers in excess of 120 semester hours for graduation with a result of over 40 hours in a major field even in a non-professional course.

The rank correlation coefficient between the two sets of data is -0.21 ± 0.12, showing little if any relationship between general scholastic average and number of hours in the major field.

It is interesting to note that in a somewhat similar study covering a five year period at Ohio University the relative ranking of various subject fields is strikingly similar to that found at the University of Wichita.[1] For example, in both lists, French, Spanish and mathematics are among the first five, while physical education and economics are in the lowest five; in each list chemistry and journalism are in the middle group. Exact comparison is impossible since the major fields are not always the same.

[1] R. L. Morton and L. H. Miller, *School Science and Mathematics*, 36: 965–967, December, 1936.

Certainly more evidence is necessary before any definite conclusions may be drawn, but one may wonder whether there is a tendency for certain subjects to attract the better student.

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LONG RANGE PREDICTION OF COLLEGE MARKS[1]

DURING recent years a few studies have been made to determine the value of intelligence tests given early in an individual's educational career for the prognosis of scholastic achievement at a much later period.[2] If results obtained from the administration of intelligence tests during the elementary or secondary school periods of training could be employed for effective prediction of performance at much later periods, as, for example, at the college level, the value of such results for guidance obviously would be very great.

The purpose of the present investigation is to show the value of the intelligence quotients made by the same pupils on the Detroit First Grade Intelligence Test administered when the pupils entered the first grade and on the Detroit Advanced Intelligence Test administered to the pupils during the twelfth grade for the prediction of honor point averages earned at Wayne University, Detroit, Michigan.

Data were obtained for 200 pupils. The range of intelligence quotients on the Detroit First Grade Intelligence Test was from 87 to 153; on the Detroit Advanced Intelligence Test, from 73 to 137. The mean IQ's were 115.9 and 109.3, respectively; the standard deviations of the IQ's were 12.7 and 10.9, respectively. The

[1] This paper is a summary of a master's thesis written at the University of Detroit by Marie Anna Rosenfeld: The Prediction of College Achievement from Intelligence Test Results Obtained During the Grade and Secondary School Periods, Unpublished Master's Thesis. Detroit, Michigan: University of Detroit, June, 1937. Pp. 93.

[2] F. H. Finch and C. L. Nemzek, *Minn. Jour. Educ.*, 15: 96–97, November, 1934; *Jour. Applied Psychol.*, 18: 454–460, June, 1934; "Minnesota Studies in Articulation," pp. 20–26, Minneapolis: Committee on Educational Research, University of Minnesota, 1937. V. A. C. Henmon and Ruth Byrns, SCHOOL AND SOCIETY, 41: 877–880, June, 1935.

honor point averages ranged from .00 to 2.60 with a mean of 1.54 and a standard deviation of .47.

Pearson product-moment coefficients of correlation were computed using (1) the Detroit First Grade Intelligence Test IQ's, (2) the Detroit Advanced Intelligence Test IQ's and (3) honor point averages earned in Wayne University. The following results were obtained: r_{12}, .31 ± .04; r_{13}, .21 ± .05; and r_{23}, .46 ± .04.

It is obvious that the Detroit First Grade Intelligence Test IQ's have practically no value for predicting university honor point averages. The coefficient of correlation between the Detroit Advanced Intelligence Test IQ's and honor point averages is typical of results reported by other investigators. Kinney summarized 353 studies showing the relation of intelligence test results to scholastic marks in colleges and universities. The median of 474 coefficients of correlation was .44.[3]

When the Detroit First Grade Intelligence Test IQ's were combined with the Detroit Advanced Intelligence Test IQ's by means of the multiple correlation technique to predict honor point averages, $R_{3.12}$ was found to be .47 ± .04. It is clearly demonstrated that the addition of the Detroit First Grade Intelligence Test IQ's does not increase the effectiveness of prediction obtainable by the Detroit Advanced Intelligence Test IQ's alone.

It is also interesting to note that the Detroit First Grade Intelligence Test IQ's bear only a slight relation to the Detroit Advanced Intelligence Test IQ's. The data suggest that the Detroit First Grade Intelligence Test IQ's are not comparable with the Detroit Advanced Intelligence Test IQ's. Secondly, it is possible that the two tests are measuring different mental functions. Furthermore, the low relationship may be a function of the reliability of the tests.

SUMMARY

(1) Detroit First Grade Intelligence Test IQ's, Detroit Advanced Intelligence Test IQ's, and honor point averages earned in Wayne University were obtained for 200 pupils.

(2) Detroit First Grade Intelligence Test IQ's and honor point averages correlated .21 ± .05.

(3) The Detroit First Grade Intelligence Test IQ's have practically no value for predicting college marks.

(4) Detroit Advanced Intelligence Test IQ's and honor point averages correlated .46 ± .04.

(5) The value of the Detroit Advanced Intelligence Test IQ's for predicting college marks is equal to that of intelligence tests in general.

(6) Detroit First Grade Intelligence Test IQ's combined with Detroit Advanced Intelligence Test IQ's by means of multiple correlation correlated .47 ± .04 with honor point averages.

(7) The Detroit First Grade Intelligence Test IQ's do not increase the effectiveness of prediction obtainable by using the Detroit Advanced Intelligence Test IQ's alone.

(8) Detroit First Grade Intelligence Test IQ's and Detroit Advanced Intelligence Test IQ's correlated .31 ± .04.

(9) The Detroit First Grade Intelligence Test IQ's, obtained at entrance to the first grade, have practically no value for predicting Detroit Advanced Intelligence Test IQ's, obtained during the twelfth grade.

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[3] Lucien B. Kinney, "An Analysis of the Literature Dealing with Intelligence Testing in Colleges and Universities," unpublished paper. Minneapolis: Committee on Educational Research, University of Minnesota, 1931. Pp. 23.

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BADER, JEWEL J. and MAURICE M. KORN. *From Little Acorns; and Other Plays.* Pp. 159. Illustrated. Beckley-Cardy. $1.00.

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